

METHOD AND APPARATUS FOR MANUAL DELIVERY OF VOLUME AND PRESSURE-
CONTROL ARTIFICIAL VENTILATION

Abstract: A combination of a bellows structure (12), volume restrictor, and pressure restrictor for use on a hand-operated resuscitator is provided to enable delivery of ventilation within specific volume and pressure limitations specified by the operator. The bellows structure (12) consistently provides predictable and uniform generation of gas flow for ventilation without regard to one or two-handed technique, hand placement, or hand size. The volume restrictor, primarily comprising of an inflow obturator (20), outflow obturator (22), and placement cam (34), enables the physician to specify a specific tidal volume to be delivered, which constitutes a volume-controlled cycling capability of the invention. The pressure restrictor, primarily comprising of an outer housing (40), stopper housings (41), and a stopper (50), enables the physician to specify a specific maximum airway pressure to be exposed to the patient, which constitutes a pressure-controlled cycling capability of the invention. Combined use of the volume and pressure restricting mechanisms can provide for various additional abilities, including limiting airway pressure during volume-controlled ventilation or providing a means to detect decreasing pulmonary compliance.